

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. Claims 1-14 remain pending, claims 1 and 8 being independent. In this Reply, Applicants have amended claims 1 and 8.

Specification

In response to the informality cited by the Examiner on page 2 of the Office Action, Applicants have amended page 21, line 1, of the specification, changing "114" to --S114--. In view of this amendment, Applicants respectfully request that the objection to the specification be withdrawn.

Prior Art Rejections

1. **Fossum - Nakano**

Claims 1-4 and 8-11 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent 6,137,100 to *Fossum et al.* (hereinafter "*Fossum*") in view of U.S. Patent 6,094,220 to *Nakano et al.* (hereinafter "*Nakano*"). This rejection is respectfully traversed.

Independent claim 1 is directed to a method of controlling a solid-state image pickup apparatus. The method of claim 1 comprises: a preparing step of preparing a solid-state image pickup apparatus configured to process and output an image signal output from a solid-state image sensor that converts an optical image representative of a field and focused on the solid-state image

sensor by a lens to the image signal, the solid-state image sensor including a plurality of composite pixels which are arranged in a photosensitive array and each of which includes a main photosensitive cell and an auxiliary photosensitive cell different in sensitivity from each other and respectively formed by a main photosensitive portion and an auxiliary photosensitive portion, a plurality of microlenses respectively positioned in the plurality of composite pixels for focusing incident light, and a plurality of color component filter segments respectively positioned in the plurality of composite pixels in a preselected color component filter pattern. The method of claim 1 further comprises: a photometry step of executing photometry with the field; a signal processing step of processing the image signal; and a control step of switching signal processing of the signal processing step in accordance with a result of photometry executed in the photometry step; wherein, in the signal processing step, color difference gain processing for the image signal is switched in accordance with control of the control step to thereby lower a chroma of the image signal.

Therefore, the method of claim 1 relates to functions associated with a solid-state image sensor in which each composite pixel includes a main photosensitive cell; an auxiliary photosensitive cell; a color component filter segment; and a microlens. In the claimed method, when processing an image signal

output from the solid-state image sensor, color difference gain processing is controlled in accordance with a result of photometry to lower a chroma of an image signal.

The primary reference, *Fossum*, discloses an image sensor having photodiode-type collecting pixels, each of which is divided into collection areas for different color components. In the example illustrated in Fig. 1B, the collection areas are provided with color filters having a size corresponding to the particular color component. Col. 2, lines 38-44. *Fossum*, however, fails to disclose a method for use with a solid-state image sensor in which each composite pixel includes a main photosensitive cell and an auxiliary photosensitive cell (different in sensitivity) and a corresponding color component filter segment as recited in claim 1.

The Examiner's reliance on the secondary reference, *Nakano*, fails to make up for this deficiency of *Fossum*.

To establish *prima facie* obviousness, all claim limitations must be taught or suggested by the prior art and the asserted modification or combination of prior art must be supported by some teaching, suggestion, or motivation in the applied reference or in knowledge generally available to one skilled in the art. *In re Fine*, 837, F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Thus, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385,

165 USPQ 494, 496 (CCPA 1970). The prior art must suggest the desirability of the modification in order to establish a *prima facie* case of obviousness. *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1995). It can also be said that the prior art must collectively suggest or point to the claimed invention to support a finding of obviousness. *In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986); *In re Ehrreich*, 590 F.2d 902, 908-09, 200 USPQ 504, 510 (CCPA 1979).

At least in view of the above, Applicants respectfully submit that the asserted combination of *Fossum* and *Nakano* (assuming these references may be combined, which Applicants do not admit) fails to establish *prima facie* obviousness of claim 1, or any claim depending therefrom. Furthermore, Applicants submit that claim 8 and claims depending therefrom define over the asserted combination based on reasoning similar to that set forth above with regard to claim 1.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the Examiner's rejection under 35 U.S.C. § 103 based on the asserted combination of *Fossum* and *Nakano*.

2. **Fossum - Nakano - Nakata**

Claims 5 and 12 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over *Fossum* in view of *Nakano*, and

further in view of U.S. Patent 6,747,696 to Nakata et al. (hereinafter "Nakata"). This rejection is respectfully traversed.

As set forth on pages 6-7 of the Office Action, the Examiner relies on Nakata as allegedly disclosing incremental features of dependent claims 5 and 12. Applicants submit, however, that this reliance on Nakata fails to make up for the deficiencies of the Fossum-Nakano combination discussed above. Therefore, the asserted combination of Fossum, Nakano, and Nakata (assuming these references may be combined, which Applicants do not admit) fails to establish *prima facie* obviousness of any pending claim.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the Examiner's rejection under 35 U.S.C. § 103 based on the asserted combination of Fossum, Nakano, and Nakata.

3. Fossum - Nakano - Ng

Claims 6-7 and 13-14 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Fossum in view of Nakano, and further in view of U.S. Patent 5,699,102 to Ng et al. (hereinafter "Ng"). This rejection is respectfully traversed.

As set forth on pages 7-8 of the Office Action, the Examiner relies on Ng as allegedly pertaining to incremental features recited in the above-listed dependent claims. Applicants submit, however, that the Examiner's reliance on Ng fails to make up for

the deficiencies of the *Fossum-Nakano* combination discussed above. Therefore, the asserted combination of *Fossum*, *Nakano*, and *Ng* (assuming these references may be combined, which Applicants do not admit) fails to establish *prima facie* obviousness of any pending claim.

Furthermore, Applicants note that *Ng* teaches compensation for shading caused by an imaging lens based on an RGB division photometry result. See e.g., shading compensation element 16 in Fig. 1. *Ng* fails to teach, however, a control step as recited in claim 1, which determines shading on the basis of the result of photometry and switches the processing of a signal processing step in accordance with this determination. Similar reasoning applies to dependent claim 13.

In view of the above, Applicants respectfully request reconsideration and withdrawal of the Examiner's rejection under 35 U.S.C. § 103 based on the asserted combination of *Fossum*, *Nakano*, and *Ng*.

Conclusion


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Applicants respectfully petition for a two (2) month extension of time pursuant to 37 C.F.R. §§ 1.17 and 1.136(a). A check in the amount of \$450.00 in payment of the extension of time fee is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
D. Richard Anderson, #40,439

DRA/jdm
0378-0404P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000